ABSTRACT OF THE DISCLOSURE

Method and apparatus for testing a directional acoustic device such as a directional hearing aid having level-dependent non-linear circuitry, in which two or more speakers are placed at desired positions relative to the hearing aid, e.g. in front and behind the hearing aid. The speakers are excited simultaneously with broadband excitation signals formed from components which are orthogonal to each other, e.g. sinusoids, where the bin frequencies of the Direct Fourier Transform ("DFT") of one excitation signal are different from the bin frequencies of the other excitation signal. Thus, the response to each excitation signal can easily be extracted without filtering, allowing the directional characteristics of the hearing aid to be evaluated.